UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,644	06/29/2001	Kenta Matsui	862.C2273	5806

			EXAMINER
5514	7590	08/24/2005	QIN, YIXING

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

ART UNIT	PAPER NUMBER
2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/893,644	MATSUI, KENTA
	Examiner	Art Unit	
	Yixing Qin	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *24 May 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35, 37 and 38* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35, 37 and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 June 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

In response to applicant's amendment received 5/24/05, all requested changes

have been entered.

Response to Arguments

The Examiner has considered the arguments made but still believes that the

Blank reference teaches and/or suggests the currently claimed invention. The

Examiner would like to focus mainly on Figs. 4a-4h of Blank, which shows the layering

of images is based on transparency/opacity and what one sees (i.e. the pixels of the

various layers of images) in the final layered image. The Examiner would like to note

that while Blank focuses mainly on gamma as the attribute in his invention, one of

ordinary skill would know that if a pixel is part of an image, then it would be very

obvious, if not inherent, that pixel would have an attribute of "image."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

I.   Claims 1, 5, 6, 8-10, 14, 15, 17-19, 23, 24, 26, 27, 31, 32, 34, 35, and 37-39 are

rejected under 35 U.S.C. 103(a) as being unpatentable over Blank (U.S. Patent No.

5,577,179).

1.   **Claims 1, 10, 19 and 27**
   - Blank discloses in column 4, lines 9-11 that each pixel has a hue gamma (i.e. color)
   - Blank also discloses in column 10, lines 47-58 an example of which pixel of which layer is seen based upon its transparency/opacity and the transparency/opacity of the layers above it. Although Blank does not go into detail about the color of the pixels, one of ordinary skill would understand that, for example, if the color of the pixel in the layer Z=3 (topmost layer) is black and that layer is opaque (i.e. has no transparency/transmissivity), then the pixel at that position seen in the final layered image would have a black color. Also, take, for example, the pixels (i.e. **first pixel**) in the hat (one would understand that the color of the hat can be any color) in layer Z=2 of Fig. 4h. One can see that it is layered over a hair area in layer Z=1 with pixels (i.e. **second pixel**) that are the color of the person's hair. In the final layered image, one can see that the hat is shown, which indicates that due to the transparency/opacity of the pixels at those particular positions (corresponding to the hat and the hair), the **resulting pixel (and its color) is determined** to be the same as the pixels in the hat because it is obvious that the hat area is opaque and "covers up" the hair area in the layer below it.
   - The same argument can be made for the selection of an image, graphic, or character attribute. As mentioned above, if a pixel is part of an image, then it would be very obvious, if not inherent, that pixel would have an attribute of "image," which is what the pixels of the hat and the hair area would have in Fig. 4h. Thus, from above, when it is determined that the resulting pixel is that of the hat, the resulting attribute would be of the type "image."
   - Also note that in layer Z=3 that there is a text area that is opaque since it "covers up" the layers below. One can see that layer Z=0 have image pixels in the same area as the text pixels of the words "Joe Doe" and "San Diego Friars." The resulting pixels in that area, obviously, have the attribute of "text" due to the opacity of the text area in Z=3.

2.   **Claims 5, 14, 23 and 31**
   - Blank discloses in Fig. 9 and column 16 lines 29-30, that in Fig. 9, "...the function 268 for enhancing the pixels of an image will be described." The "enhancing" shown in Fig. 9 reads on the claimed "**processing**." Again, as mentioned above in claim 1, it would be obvious that the determination of the color of the pixel of a resulting image is based on the opacity/transparency of the various pixels in the layers that make up the image.

3.   **Claims 6, 15, 24 and 32**
   - Blank discloses in column 16, lines 48-61 that a blend operation based on the hues of pixels as a means of enhancing pixels. Hue is essentially a color

attribute and the blending of the hues as described by the Blank reference involves the use of a blend factor that determines the opacity (or transparency of the resulting blended pixel – same column, lines 61-65). This change in opacity effectively changes the appearance/color of a pixel.

4.   Claims 8, 17, 26, and 34
- Blank discloses in column 6, lines 62-63 that his "...apparatus 104 further includes a <u>printer 118</u>..." Again, as mentioned above in claim 1, it would be obvious that the determination of the color of the pixel of a resulting image is based on the opacity/transparency of the various pixels in the layers that make up the image.

5.   Claims 9, 18
- Blank discloses in column 6, lines 62-63 that his "...apparatus 104 further includes a <u>printer 118</u>..."

6.   Claim 35
- Blank discloses in column 8, lines 33-36 that two images are captured and digitized. In the same column, lines 55-65, Blank discloses that a user may choose a background and may layer his taken image (such as an image of his head) onto the background (as seen in Fig. 4). One would understand that the backgrounds are premade and stored in the computer as well.

7.   Claims 38 and 39
- These two claims have been addressed in claim 1 above.

8.   Claim 37
- Blank discloses in Fig. 2 a graphical interface 132, a computer and a storage 134. It would be a matter of design as to which memory (i.e. memory inherent in the computer or the storage 134) to store the various data. The processing of the attributes of the image data based on transmissivity has been discussed in the rejection to claims 1, 10, 19 and 27 above.

II.   Claims 2, 4, 11, 13, 20, 22, 28, and 30 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Blank (U.S. Patent No. 5,577,179) in view of Buxton et al (U.S.

Patent No. 6,118,427).

The Buxton et al reference discloses a system and a method for enhancing performance on a GUI with transparent windows. Text or images can be layered.

9.   Claims 2, 11, 20 and 28

- Blank discloses in column 16, lines 1-12 that "...the computer 130 at step 404 <u>determines whether the hue gamma of the object will be changed to</u> <u>match the</u> <u>hue gamma of the background or</u> whether the hue gamma of the background will be changed to <u>match the hue gamma of the object</u>. This determination by the computer 130 can be accomplished in response to an interactive command by the user of the system 100, i.e., <u>the user of the system 100 can decide</u> whether he wishes to change the lighting condition of the background..."

- The Blank reference does not explicitly state that the user (or the computer) uses some sort of threshold to determine which lighting condition the background will be. However, it does disclose the use of thresholds when enhancing pixel images (column 16, lines 29-47, especially lines 41-47)

- The secondary reference, Buxton et al, discloses in column 3, lines 61-67 and column 4, lines 1-15, various thresholds for identifying images as solid or transparent. Furthermore, in column 6, lines 36-38, Buxton et al discloses that "...a GUI must <u>distinguish the attributes of foreground objects as much as</u> <u>possible from attributes of background objects</u>." One would understand that if an object is considered solid (i.e. the layer above it is very transparent or itself is very solid as to cover a layer below it or both), the "attribute" of the pixels on the display would take on the attributes of object. For example, if a very bright picture is completely solid and overlapped above a very dark picture, the resulting picture shown on the screen would be bright.

- Both references are in the art of manipulating images through the use of layers and transparency. This will serve as the motivation for the combination of the Blank and Buxton references for those claims using these two references in this office action.

- It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate thresholds as a way to determine the attributes of a resulting composite image into the invention by Blank. The motivation would be to allow an automated process in which to decide on the attributes of a composite image, instead of having a user choose.

10.   Claims 4, 13, 22, and 30

- Again, the Blank reference does not go into great detail about the thresholding aspect of image processing. However, the secondary reference, Buxton et al, discloses various experiments performed in which users were to identify background images with varying transparency foreground overlapped images (column 11, lines 14-19). One can see in tables 2, 3 and 4 in columns 11 and 12, the results of the experiments with respect to a transparency level. Transparency is the measure of the light that can pass through a pixel, making it obvious that pixels would contain this attribute.

- Furthermore, in column 17, lines 40-58, Buxton et al discloses a program flow of their invention, showing that <u>there are different threshold levels for different types</u>

of applications (text, animation, modeling, etc.). These are based on results from the experiments.

- The motivation for the addition of this feature into the Blank invention is that different combinations of data may need different criteria in order to process.

III.   Claims 7, 16, 25 and 33 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Blank (U.S. Patent No. 5,577,179) in view of Sugawa (U.S. Patent

No. 5,371,610)

The Sugawa reference discloses an apparatus capable of processing a selected area of image data.

11.   Claims 7, 16, 25 and 33

- The Blank reference does discloses the blending of the hues of the pixel, but does not mention that pseudo toning processing can be performed on the pixels.
- The secondary reference, Sugawa, discloses in column 1, lines 50-52, that "[p]seudo-tone processing based on the dither method or error diffusion method, on the other hand, is better suited for halftone images such as photographs."
- Since both references are in the art of image processing and image enhancement, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate pseudo tone processing into the Blank invention. The motivation would be to provide a different method of enhancing images that could be more suited to the particular needs of a user.

IV.   Claims 3, 13, 21, and 29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Blank (U.S. Patent No. 5,577,179) in view of Buxton et al (U.S.

Patent No. 6,118,427) and further in view of Rosenfeld et al ("Digital Picture

Processing," second edition, volume 2).

The Rosenfeld et al reference discloses a multilevel thresholding concept to be used on processing grayscale images.

12.   Claims 3, 12, 21, and 29

- Again, the Blank reference does not go into great detail about thresholding, it does disclose the layering of images and the change in the gamma (i.e. attributes of the layered images to match some specified attribute). The secondary reference, Buxton et al discusses both thresholds and layering images, but does not explicitly disclose the use of two thresholds as a means of judging the attribute of a resulting pixel when two pixels are combined.
- However, the tertiary reference, Rosenfeld et al discloses in pages 66-68, the idea of multilevel thresholding for a grayscale image. One can see from Fig. 4 on page 66, that Fig. 4c shows the thresholded image of Fig.4a. Essentially, pixels are converted to black, white or gray depending on where the pixels falls (i.e. above, below or in between the two thresholds). One skilled in the art of image processing would understand that the transmissivity is essentially a measure of the lightness or the darkness of a pixel, which the Rosenfeld reference is doing with the scale of grayness of an image.
- Since all three references are in the art of image processing and image enhancement/correction, it would have been obvious to one of ordinary skill in the art to use a two threshold technique to further enhance the Buxton et al's one threshold technique. The motivation would be to achieve further accuracy or more desirable result when images of pixels are enhanced/corrected.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yixing Qin whose telephone number is (571)272-7381. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (571)272-7402. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YQ

JOSEPH R. POKRZYWA
PRIMARY EXAMINER
ART UNIT 2622